DOCUMENT RESUME

ED 047 219 AC 008 955

AUTHOR Fagin, Margaret C.
TITLE Life Experience Has Academic Value: Analysis of the Performance of 319 Missouri Women on Three Examinations of the College Level Entrance Program.
PUB DATE 71
NOTE 46p.; Paper presented at the Adult Education Research Conference, New York City, February 2-5, 1971

EDRS PRICE EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS *Adults, Children, *College Entrance Examinations, College Freshmen, College Students, English, Family Status, *Females, High School Graduates, Marital Status, Natural Sciences, Participation, Research, Social Sciences, *Test Results, Working Women
IDENTIFIERS Missouri

ABSTRACT

The performance of 319 Missouri women on the English, social science, and natural science College Level Entrance Examinations was analyzed. The sample comprised women from metropolitan St. Louis and nine rural areas in Northern Missouri. The typical participant was married; was a high school graduate; had 2.8 children; had participated in informal education; and was employed. The participants' mean score on the English examination was 462, as compared with a mean of 506 for 1189 freshmen and 516 for 1207 sophomore women. The women's performance on the Natural Science examination was the poorest of the three. The mean score for the total group of 319 was 409, representing about the 32nd. percentile for freshmen and the 25th. percentile for sophomores. Only 304 scores were available for the Social Sciences Examination. Scaled scores for these women ranged from 289 to 687, with a mean of 451, as compared with a mean of 463 for 277 freshmen and 481 for 297 sophomores. This was the only examination of which the mean score for women did not differ significantly from those for freshmen and sophomores. (Author/NL)

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED047219

LIFE EXPERIENCE HAS ACADEMIC VALUE

Analysis of the Performance of 319 Missouri Women on Three Examinations of the College Level Entrance Program

A Paper

Presented at the

Adult Education Research Conference

New York City

February 1971

Margaret C. Fagin

Director of Programs for Women, Family, and Youth
and
Associate Professor of Education
University of Missouri - St. Louis

AC008955

A program designed to give adults an opportunity to secure college credit by examination - this describes one of the major purposes of the College Level Examination Program. It was launched in 1965 by the College Entrance Examination Board with cooperation from the Educational Testing Service, which had developed the examinations formerly called the College Comprehensive Tests, now a substantial part of CLEP. Mature individuals who take the tests can thereby demonstrate the academic value of life experience and of the informal, non-traditional education they have had since their last exposure to the classroom.

Norms for the CLEP General Examinations have already been established at the college freshman, sophomore, and senior levels, using students enrolled in regular classes on a number of campuses in all parts of the United States. The General Examinations have also been used to a limited extent in business and industry, where men were tested with a view to determining

promotability and facilitating their advancement to management levels. A few universities have used the tests in counseling adults and have pioneered in allowing credit in individual instances of superior test performance.

STATEMENT OF THE PROBLEM

A gap remains, however: To date masses of data are lacking to show whether adults in the general population -- particularly women -- can perform acceptably on such examinations. Adult men composed the USAFI population who took the CLEP tests, but no systematic attempt has so far been made to assess the performance of mature women.

Certain questions have arisen. Would it be useful to compare a woman's scores with those of her peers, particularly for guidance and screening in educational and work situations? What would be the test performance level and range of adult women, as compared with the college students of the CLEP norm tables? Would

age be a significant factor in determining performance? What about length of time elapsed since an individual's last formal classroom experience? What about educational level, as well as the effect of various kinds of informal, non-credit educational experience? Would a person's reasons for seeking to continue her education bear a significant relationship to her performance on the CLEP examinations? Would work experience be a factor?

METHOD

In an attempt to seek answers to these and related questions and to establish normative data for adult women, arrangements were made to administer certain of the General Examinations to 319 women in Missouri, some from the metropolitan St. Louis area, and some from the more rural setting of nine counties in the northern part of the State. The sample was selected from women who had previously indicated in some fashion an interest in continuing their education. All were high school graduates and at least 25 years

old; there was no ceiling on either educational level or age.

The St. Louis group was recruited from 750 women who, between July 1, 1966 and July 1, 1967, had made some kind of contact with the new program in Continuing Education for Women in the Extension Division of the University of Missouri - St. Louis. Of 750 who received information and an invitation to participate in "an interesting intellectual experience," 260 returned postcards indicating their interest.

One hundred and eleven women reported for the first session; 37 others, most of whom were employed, came on a Saturday. Two Extension Division secretaries and a transfer student, who despaired of getting the University to accept her 9-year old credits, rounded out the "urban" sample of 151 women.

One hundred sixty-eight women from nine counties[1] in the Green Hills Area of Northern Missouri participated in testing sessions held in four population centers[2] of the region during January,

1968. Under the direction of Home Economists in County Extension Offices, an announcement of the testing sessions was sent to 1551 women who a year earlier had completed a detailed questionnaire sponsored by University-Wide Extension, inquiring about their interest in continuing education. Two hundred of the 1551 indicated interest in the CLEP testing program.

The nine Green Hills counties had been selected in 1965 by University-Wide Extension for a survey of women's interest in continuing education because County Extension personnel in the area had expressed a desire to develop new program directions for women. Data from the study were expected to provide a basis for effective use of the resources of the University.

Opportunities for college-level instruction are limited in the Green Hills Area. There is a junior college in Trenton, but the nearest 4-year, degree-granting institutions[3] are located 60 or 70 miles from the homes of the women in this study. Credit courses

are available through University Extension, but these are contingent upon minimum enrollment figures and (for part of the year) favorable weather and road conditions.

DESCRIPTIVE PROFILE OF 319 WOMEN

Background information about the 319 participants was collected by means of a personal data sheet, completed by each woman at the beginning of the testing session. Analysis of this information might suggest which factors, if any, are related to successful performance on the examinations. Questionnaire items related to age, family situation, previous educational experience, employment status, and motivation for seeking further education.

AGE

The 319 women ranged in age from 25 to 73, with a median age of 41.5. The St. Louis group was somewhat younger, with a median age of 39.5, compared with 42 for the Green Hills women. The oldest participant in the St. Louis group was 66, while the

Green Hills group included one woman 69, another 70, and two aged 73.

FAMILY STATUS

All but 10 participants (3%) were, or had been, married. Thus 309 women reported a total of 849 children, or an average of 2.83 children per woman, ranging in age from 5 months to 39 years. The greatest number of children (28%) were in the 5 to 9 bracket. At least two of the women were pregnant at the time they took the examinations.

EDUCATIONAL LEVEL

All women who participated in the examination were required to be high school graduates, but no ceiling was established for educational level, which then became a factor in the women's ability to perform. On the basis of the explanation given in the invitation, it was presumed that the project would have the greatest appeal to those who had little or no college work. The

response showed that this was indeed the case. Nearly 70% (221) of the total group reported completion of no more than two years of college. In the St. Louis sample, the largest number (55 or 36%) were high school graduates only, whereas the largest group (45 or 27%) of Green Hills women had had at least some college experience -- "one year or less." Eight per cent of the 319 women had done graduate work; 19 of these 27 women were in the Green Hills group.

Most of the 69 women with undergraduate or graduate degrees were in the Green Hills sample. All but one of the six graduate degrees reported were in that group. The Green Hills group reported twice as many undergraduate degrees (42) as the St. Louis sample (21). On the whole, the educational level of the rural women was somewhat higher than that of the metropolitan group.

MOST RECENT ENROLLMENT IN SCHOOL OR COLLEGE

One third (106) of the total group had been away from a formal educational situation from 20 to 29 years. Eighty-eight

(27.6%) had been away from 10 to 19 years, and 90 (28%) less than 10 years. For 10 women, it had been more than 40 years since they had been formally enrolled in an educational institution; 25 had not attended school for periods ranging from 30 to 39 years. The largest number of St. Louis women (56) had been enrolled within the last 10 years, whereas the largest number of Green Hills participants (62) had not attended for 20 to 29 years.

INFORMAL EDUCATIONAL EXPERIENCES

The questionnaire check-list of informal educational experiences included: non-credit classes, television classes, correspondence courses, organizational study groups, and a free-response item. Respondents could check more than one item. Sixty-five persons (20%) checked none of the items; presumably, they had participated in no such activities. Almost all of these non-participants were under 50, with nearly half (32) in the 40 to 49 age bracket. Most of them represented the lower educational levels.

Three-quarters (48) of those reporting no informal educational experience had not gone beyond the freshman year in college, and of the 48, 29 were high school graduates only. The remaining 254 women checked a total of 429 items. One hundred eighty-two had attended non-credit classes, and 125 had participated in organizational study groups. "Other" experiences ranged from participation in a sensitivity training group to the Great Books discussion series. Most often mentioned (14 times) were church-related training sessions, usually for teachers and leaders. One woman had planned a reading program for herself; others listed lecture series; another felt that running the office for her husband had been an educational experience.

Two-thirds of the St. Louis women had attended non-credit courses, as compared with slightly less than half of the Green Hills group. This probably reflects the wealth of educational opportunities available in a metropolitan area, as contrasted with the relative

paucity of such offerings in a more rural setting. Almost the same percentage (38% St. Louis; 40% Green Hills) of both groups had taken advantage of organizational study groups.

WORK EXPERIENCE

Proportionately more of the Green Hills women were employed at the time of the testing session -- 44% as compared with 39% for the St. Louis group. This is probably related to the higher average educational level of the rural women noted above, as suggested by the Women's Bureau of the U.S. Department of Labor: (1) "There is a direct relationship between educational attainment and their labor force participation. The more education a woman has received, the greater the likelihood that she will be engaged in paid employment." Forty-one percent of the total sample were currently working. Of the St. Louis women not employed at the time of the test, only 3 stated that they had never worked. The corresponding Green Hills figure was 7. Of the total group, 309 (97%)

had been employed at some time.

EDUCATIONAL PLANS

Ninety-one percent (289) of the entire group indicated interest in continuing their education. One hundred seventy-three actually checked the space beside the statement, "I am interested in continuing my education"; 116 others, although leaving this space blank, checked one or more of the reasons listed beneath the statement. Presumably they, too, were interested.

Respondents could check more than one reason for their interest, and most of them did. Among the 102 women choosing only one item from the list, "work toward a college degree" was the response most frequently checked (40). Thirty-four gave "personal enrichment" as their only reason. No one checked only "community service," and only one woman wanted to study solely to "fill up her time."

Turning to the 187 women who gave more than one reason

for wishing to continue their education, we find that "personal enrichment" was chosen 153 times, and "work toward a college degree," 108 times. The two job-related items were checked 134 times between them: 62 women wished to advance in their employment, and 72 wanted to prepare themselves for employment. Only 13 were seeking education in order to fill up their time, in addition to other reasons.

Analyzing educational plans as to age, the largest number of women indicating interest in working toward a degree were in the 31 to 40 age bracket -- about the time that the youngest child has started to school. This age group also included the largest number desiring to prepare for a job and seeking personal enrichment. The 41 to 50 year category had the most respondents who checked "advance in my employment" and "prepare for volunteer work." Although the actual number was small, more women between 41 and 50 (the "empty-nest" period) were interested in filling up their time than in any other group.

In terms of educational level, there were more women in the total sample with two years or less of college who were seeking a degree than in any other category. However, among the St. Louis women, most degree-seekers were high school graduates only. The largest number of those wishing to prepare for a job or desiring personal enrichment were the high school graduates. Most Green Hills respondents to both these items had had at least some college work. The majority of those in the total group who wished to advance in their employment were in the high school bracket, but the largest number of Green Hills women checking this item had done at least some graduate work.

Twenty-three women added their personal reasons for seeking more education. Ten gave reasons related to employment; three wanted to help their children, and three wished to supplement the family income. A 34-year-old high school graduate wanted "to be accepted in certain groups which require a formal education"; a

woman of 51 desired "continued knowledge to serve others"; a third (in her 30's) would like "to leave some positive good behind me." Four women, three of whom are college graduates, mentioned the intellectual challenge of further education: "I believe in the Institute of Life Time Learning. It's just plain fun." (73 years old; graduate degree.) "It's a personal challenge to see if I am still able to learn in a formal situation." (College graduate, 47 years old.) "I enjoy learning; I need a specific goal (planned course)." (High school graduate, 42 years old.) "I am interested in continuing my education at all times." (College graduate, 45 years old.)

One hundred ninety-four (61%) of the total group stated that they would like to enroll in college -- 108 within one or two years, 65 within five years; the rest were either currently enrolled or uncertain about their plans. Seventy-two per cent of the St. Louis women (whose over-all educational level was lower), compared

with 51% of the Green Hills group, wished to enroll. Most of the St. Louis women hoped to continue their education within one or two years, whereas more than half of the Green Hills group checked "within five years." These figures reflect comments made by the rural women, both verbally and in writing, regarding the lack of easily accessible college level instruction in their area. As a Green Hills woman of 40 remarked, "There are all kinds of educational programs available in the city. Why can't we have a little something out here in the country?"

One hundred twenty-five women indicated that they were not interested in pursuing more education at this time. Almost two-thirds (81) gave "home responsibilities" as a reason, with Green Hills women (53) out-numbering St. Louis women (28) almost two to one on this item. No other item approached "home responsibilities" in frequency of choice; lack of confidence in ability, lack of money, and lack of transportation were all mentioned much less frequently.

In only fourteen cases did a woman state that her husband was not in sympathy with her continued education. No one felt that "it would be too much work."

WILLINGNESS TO MEET

Ninety-seven per cent of the total group indicated willingness to meet at a later date to discuss their reactions to CLEP and to receive an interpretation of the group's test performance, as well as individual records of their own scores.

Sessions for score interpretation were scheduled at three different times in both the St. Louis and the Green Hills areas. Participants had been told that attendance was necessary in order to receive personal score reports. Seventy-five per cent of the women attended these meetings, where visual aids were used to explain group performance in terms of means, medians, percentiles, and standard deviations. Each woman was then given an individual report of her scores and had an opportunity to discuss its meaning.

Examination of the records of those who did not come to one of the interpretation sessions revealed that the mean scores for this 25% were below the mean for the total group on all three examinations. Judging from the comments of a number of participants, some of these women may have felt that they did not do well on the tests and were reluctant to have their fears confirmed. It should be noted, however, that there were several individual scores of 500 or better in this group.

PROFILE SUMMARY

If one were to construct profiles of the typical St. Louis woman and the typical Green Hills woman, a number of similarities would be apparent. Both would be married and each would have 2.8 children, the youngest between 5 and 9 years old. Both have participated in informal educational experiences, probably some kind of a non-credit class. Neither is currently employed, but both have worked at some time. Both are interested in continuing their

education, mainly for reasons of personal enrichment.

As to differences, the Green Hills woman, at age 42, is two years older than her metropolitan counterpart. She has had some college experience (but no more than a year), while the typical St. Louis woman has not gone beyond high school. It has been between 20 and 29 years since the Green Hills participant has been formally enrolled in school or college, while the St. Louis woman has had that experience within the last ten years. While both wish to continue their education, the metropolitan woman plans to enroll within the next year or two, while the rural woman expects to wait as much as five years to get back to school. The greatest differences between the two appear in the area relating to educational background and plans. Both, however, have demonstrated interest in the CLEP project and have surmounted a variety of obstacles and inconveniences in order to participate.

RESULTS

SELECTION OF EXAMINATIONS USED

Of the five CLEP Examinations (English, Social Sciences, Natural Sciences, Humanities, and Mathematics), the first three were selected for use in consultation with Dr. H. E. Mueller, Director of Admissions at the University of Missouri - St. Louis. It was felt that women would not be able to give the entire day (approximately seven hours) that would be required for the actual testing and the preliminaries. If a woman could devote even half a day to the project, she would be making a generous contribution to this study. The English test was chosen as representing basic skill and background necessary to college work. Social Sciences-History was preferred to Humanities because of its possibly greater potential in allowing the women to demonstrate what they had learned through life experience and informal educational opportunities. Because the Mathematics test seemed too threatening for use in this

situation, the Natural Sciences examination was selected instead. English, Social Sciences, and Natural Sciences, it was felt, constitute a fairly representative cross-section of general education fields.

PERFORMANCE ON THE ENGLISH EXAMINATION

The results of College Level Examinations are reported in the form of scaled scores. For the General Examinations, raw scores (the number of correct answers minus the adjustment for guessing) from the sophomore norms group were scaled to provide a distribution of scores ranging from 200 to 800, with a mean of 500 and a standard deviation of 100 for that group (2).

The mean scaled score for the 319 women on the English examination was 462, as compared with a mean of 506 for 1189 freshmen and 516 for 1207 sophomore women. The mean for the women was significantly lower than that for both freshmen and sophomores. The score of 462 is roughly equivalent to the 33rd percentile for

freshman women and the 29th percentile for sophomores.[4] Scores for the women ranged from 273 to 692, with a standard deviation of 88, showing the women to be somewhat more homogeneous in their test performance than were the freshmen, with a standard deviation of 105 or the sophomores with 98. Only on the English test did anyone score as low as two standard deviations below the mean. Two women placed just below the point of M-2 standard deviations. There was almost no difference between the St. Louis and the Green Hills means, which were 461 and 465, respectively.

PERFORMANCE ON THE NATURAL SCIENCES EXAMINATION

In general, the women's performance on the Natural Sciences Examination was the poorest of the three, although a few with education or job experience in this field did outstandingly well. The mean score for the total group of 319 was 409, representing approximately the 32nd percentile for freshmen and the 25th percentile for sophomores. (These percentile comparisons are remarkably

similar to those stated above for the English Examination.) The means of 461 for 287 freshmen and 474 for 290 sophomores are significantly higher. A standard deviation of 70 for women again indicates greater homogeneity within this group, as compared with 95 for freshmen and 90 for sophomores. No score was lower than two standard deviations below the mean, while eight ranged upward of the M+2 standard deviation mark. Due to the special circumstances mentioned above, it was necessary to go to 5 standard deviations above the mean in order to include the highest score, so that this distribution gives a clear picture of positive skewness. The range for the total group of 319 was 272 to 715. The mean for the St. Louis group was 402, as compared with 415 for the Green Hills sample. The findings of this study suggest that this difference, while not significant, is probably related to the higher educational level noted for the rural group. Of the 21 Green Hills women who scored 500 or above on Natural Sciences, all but one had had some college,

and 11 of these were graduates. (In the St. Louis sample, where only 11 scored 500 or above, all but one had had at least some college experience.)

PERFORMANCE ON THE SOCIAL SCIENCES-HISTORY EXAMINATION

Only 304 scores are available for the Social Sciences Examination: One of the Green Hills women marked her answer sheet inaccurately, and the 14 St. Louis women who could not stay for the entire testing period missed this Examination. Scaled scores for the 304 women ranged from 289 to 687, with a mean of 451, as compared with a mean of 463 for 277 freshmen and 481 for 297 sophomores. The Social Sciences Examination is the only one on which the mean score for the women does not differ significantly from those for freshmen and sophomores. A score of 451 is roughly equivalent to the 48th percentile for freshmen and the 41st percentile for sophomores. The mean for the Green Hills group was 439, while the St. Louis women averaged 468, 5 score points above the freshman

average. The difference between the means of the St. Louis and Green Hills groups may indicate that exposure to a metropolitan environment provides greater opportunities for informal learning in this field. The standard deviation for the women was 85, as compared with 93 and 91 for the freshmen and sophomores, respectively. Like that for Natural Sciences, this distribution is positively skewed: Thirteen women scored higher than two standard deviations above the mean, while the lowest score is 8 score points above the M-2 standard deviations point. Clearly, this area offered the women their best chance to demonstrate the results of their informal, non-traditional learning experiences.

SOME INCIDENTAL OBSERVATIONS

Certain examples of outstanding test performance are worthy of special mention, since they reveal interesting information relative to the factors of age and time-lapse since the last formal educational experience. For example, the four oldest participants,

all from the Green Hills group, ranged in age from 69 to 73. Mean scores for these four on all three tests were well above the means for the other Green Hills women, and they exceeded the means for the entire group of 319 in English and in Natural Sciences. Although three of the women had done graduate work, and two of these had Master's degrees, the dates of their last formal education ranged from 1927 to 1947, 20 to 40 years prior to the testing session.

The fourth member of this group, who scored above the means for the Green Hills sample on all tests, and above the total group in English and Natural Sciences, had had no more than two years of college and no formal education since 1923.

A group of ten women who had been away from formal education for 40 years or more included four high school graduates; a woman with one year of college or less; two with two years or less; and three college graduates, two of whom have done postgraduate work. Seven of these women scored above the total group mean of

462 in English; the average score for the ten was 482. Their mean score in Natural Sciences was 408, as compared with 411 for the entire sample; five of the ten scored above 411, with a top score of 478. In Social Sciences, the mean score for the ten was 465, 12 points above the mean (453) for the total group. Seven of the ten scored above 453, with the high score of 589 made by a high school graduate who reported no formal education since her high school graduation in 1928. Statistical significance of these factors for the total group of 319 women is reported below.

ANALYSIS OF DATA

CORRELATIONS AMONG 17 VARIABLES

Data were obtained concerning relationships between test performance and such factors as age, educational background, employment status and motivation for taking the examinations. The following variables were defined and inter-correlated to obtain Pearson product-moment correlations:

1. English Examination - scaled score

2. Natural Sciences Examination - scaled score (total)

3. Social Sciences Examination - scaled score (total)

4. Age at nearest birthday

5. Number of children

6. Age of youngest child

7. Highest educational level completed

8. College degree, if any

9. Date of most recent enrollment in school or college

10. Informal educational experience

11. Type of informal educational experience

12. Employment status

13. Date of most recent employment

14. Expressed interest in attending college

15. Reasons for interest in attending college

16. Immediacy of plans for enrolling in college

17. Reasons for lack of interest in attending college

A marked relationship (r=.58) appears between scaled scores in English and Natural Sciences, as well as between scores in English and Social Sciences (r=.61). A Pearson product-moment correlation of .70 denotes substantial relationship between scaled scores in Natural Sciences and Social Sciences.

Of particular interest in the context of this survey of mature women is the fact that age has no relationship to the test performance of these adults, who ranged in age from 25 to 73. The Pearson product-moment correlation for age and English scores is .11; for age and Natural Sciences scores, -.04; and for age and Social Sciences scores, .00. This finding in itself is noteworthy in view of the objections raised on many campuses to admitting mature students and in many businesses to employing older women, lest the institution "waste" time and resources on individuals of "questionable" or unproven potential.

Variables relating to family status and employment status show slight, if any, relationship to test scores. The same is true of informal educational experience, reasons for interest in continuing education, and plans for return to the classroom.

Pearson product-moment correlations for educational level and test scores indicate substantial relationship only in Natural Sciences (r=.42). Apparently, the participants in this study have been able to use the incidental education provided by their non-traditional educational experiences to greatest advantage on the English and Social Sciences tests. In these fields, the changes in content have been less swift and dramatic than in the Natural Sciences.

ANALYSIS OF VARIANCE

An important part of this study concerns the analysis of variables operating in the group and the identification of specific factors which appear to contribute significantly to the successful

performance of the 319 women on the CLEP tests. Such information should be especially helpful to college and university staffs in the admission, counseling, and instruction of mature women. Individual women themselves will benefit from these guidelines in terms of assessing and understanding their own potential ability to handle academic work after a period of absence from the formal classroom.

Only a few of the variables were significantly related to test scores. F scores for the following variables show no significant relationship: age, number of children, expressed interest in continuing education, reasons for this interest, immediacy of plans to enroll in college, and expressed reasons for lack of interest in continuing education.

On the other hand, level of education and informal educational experience were definitely related to the women's performance on all three examinations. As to the English scores, each succeeding level of education, after one year or less of college, showed

significantly[5] better performance, up to the group with postgraduate work. Scores for women with graduate study were significantly better than scores for women who had had up to three years of college, but there was no significant difference between graduates' scores and those for college juniors and seniors. The mean score for women with bachelor's degrees only was actually higher than the mean score for those reporting postgraduate work, although the difference was not significant.

The picture with regard to Natural Sciences scores was similar; in general, test scores increased significantly with more formal education. While women with one year or less of college did not score significantly higher than high school graduates, those at all other educational levels did. Women at the two- and four-year and postgraduate levels did significantly better than the one-year students, and graduates and postgraduate students significantly outperformed women at the junior level. Scores for women at the

three-year level did not differ significantly from those at the freshman and sophomore levels.

The same pattern prevailed in general in the area of the Social Sciences. One-year and three-year college women did not differ significantly from the high school graduates, but the other educational levels did. Women reporting one year or less of college were significantly out-performed by those at all succeeding levels. Scores for those with four years of college were significantly better than those at all lower levels. However, women with post-graduate work out-performed only those at the high school and one-year levels.

In summary, the formal educational level of the 319 women was significantly related in most instances to their performance on the three General Examinations. Notable exceptions are as follows: There is no significant difference on any test between scores of those with one year or less of college and those who are high school

graduates only; or between scores of those with some postgraduate work and those with four years of college.

Participation in some kind of informal or non-traditional educational experience (e.g., non-credit course, correspondence course, television course, or organizational study group) significantly affected the scores of these women. The number of informal educational experiences was important with regard to scores in English and in the Social Sciences; those reporting more than one type of informal education averaged significantly higher scores than any group reporting only one kind of informal experience.

English scores were the only ones related to employment status. Scores for women who had never been employed were significantly lower than for those either currently employed or those who had worked at some previous time.

Recency of enrollment in school or college was important only with respect to certain scores in Natural Sciences. Even

there, those no more than ten years away from a formal educational experience significantly out-performed only the group which was last enrolled thirty to thirty-nine years ago. Recent rapid changes and increase in knowledge in this field probably account for this fact.

Geographic location affected scores in Social Sciences; the St. Louis women were significantly superior to the Green Hills group on this test.

SUMMARY

Between September 1, 1967 and February 1, 1968, the CLEP General Examinations in English, Natural Sciences, and Social Sciences were administered to 319[6] Missouri women between the ages of 25 and 73, approximately half of whom were living in the metropolitan St. Louis area and half in a nine-county rural area ("Green Hills") in northern Missouri. Participants were selected on the basis of previously expressed interest in programs in Continuing

Education for Women sponsored by the University of Missouri Extension Division.

The women's test performance was compared with normative data published by the Educational Testing Service for freshman and sophomore women college students. Normative data for the 319 women are available in the form of local percentile tables.

Personal data sheets completed by the women yielded information on their age, family status, formal and informal educational experiences, employment status, and motivation for further education. From these data, seventeen variables were identified and inter-correlated. Analysis of variance revealed which factors were significantly related to successful performance on the examinations.

It was not possible to secure data in two areas which might well have been significant in assessing the test performance of these women: previous grades and general intelligence. Further investigation might reveal useful predictive information in these fields.

Approximately 75% of the women attended post-examination sessions at which test results were explained and individual score reports were distributed. At these meetings, participants were encouraged to discuss their personal feelings and reactions to the tests in general.

The following conclusions emerge from this study:

1. It is clearly demonstrated that chronological age has no bearing on the ability of mature women to perform well on the three CLEP General Examinations used.
2. Recency of formal educational experience is significantly related to the women's test performance only on the Natural Sciences Examination.
3. Level of formal education is significantly related to performance on all three examinations -- a finding which adds to the store of validity information for the General Examinations.

4. Participation in a variety of non-traditional educational experiences significantly affects performance on all the examinations.

5. Only scores on the English test are significantly related to current or previous employment.

6. As a group, the women performed least well on the Natural Sciences test, although the highest individual scores were found in this area. This can probably be attributed to socio-cultural patterns, educational level, and a reflection of the recent and rapid changes in the fields of biological and physical sciences.

7. As a group, the women most nearly approximated the norms for freshman and sophomore students in the Social Sciences. The mean score for the urban women actually exceeded the mean for freshmen by a few points, and their performance was significantly better than that of the

Green Hills women. This area would seem to offer the women, in general, the best chance to demonstrate the educational value of non-traditional learning and life experience.

8. Whereas the urban women excelled the rural group in Social Sciences, the situation is just reversed on the Natural Sciences Examination, although this difference between the two groups is not statistically significant.

9. As judged by the standard deviations for the various distributions, the women seem to be more homogeneous as a group than do the freshmen or the sophomores.

10. On the whole, the distributions for the women's scores tended to be positively skewed; for example, out of all the scores recorded, only two English scores were lower than two standard deviations below the mean, while on each of the three tests there were individuals who

scored higher than two standard deviations above the mean.

This study tends to reinforce a major stated purpose of CLEP: to help colleges identify individuals who have achieved beyond what one would normally expect on the basis of their formal education.

The implications seem clear in terms of counseling mature women with respect to continuing their education. Mature women should not be discouraged from seeking further education or denied admission to college on the grounds that age tends to lessen their ability to perform well academically. These examinations require participants to demonstrate both knowledge and, in a sense, intellectual orientation, and the results of this study show conclusively that age is not a factor in the women's ability to perform well in this kind of a situation. It is encouraging to note that so many of the participants demonstrated a level of academic achievement far beyond what might be expected in terms of their formal education

and well above that of the "average" college underclassman.

Nor should women be penalized in terms of admission policies by the refusal to allow credit for courses taken several years earlier. Only in the field of science does recency of enrollment have a bearing on ability to do well on these examinations. Women who have engaged in various kinds of informal, non-traditional educational experiences have a significant advantage over those who have not -- a factor which, though somewhat novel, might well be considered in connection with admission.

Certain subjective outcomes of this study have been of great importance in the lives of the participants themselves. Most often mentioned by the women in interviews, group meetings, individual conferences, and on personal data sheets is the renewed feeling of self-confidence that many experienced after completing the examinations and attending the test interpretation sessions. A number were stimulated to enroll in college classes as a direct

result of this experience, and those who received credit for their test performance were understandably encouraged to pursue higher education with greater determination than before. In this connection, as well as in relation to the statistical findings of this survey, the implications for counselors of adults, college admissions officers, and employers would seem to be far-reaching.

FOOTNOTES

[1]Caldwell, Daviess, Grundy, Harrison, Linn, Livingston, Mercer, Putnam, and Sullivan.

[2]Brookfield, Chillicothe, Gallatin, and Trenton.

[3]Northeast Missouri State College (Kirksville), Northwest Missouri State College (Maryville), and Tarkio College (Maryville).

[4]All comparisons with CLEP data will refer to scores made by women only; henceforth, the terms "freshman" and "sophomore" will refer to women, unless otherwise specified.

[5]Henceforth, use of the word "significant" in connection with analysis of variance will refer to the 5% level of confidence. Several of the variables are also significant at the 1% level.

[6]Only 304 women took the Social Sciences test.

REFERENCES

(1) U.S. Department of Labor. Fact Sheet on Trends in Educational Attainment of Women. Women's Bureau. January, 1967.

(2) College Entrance Examination Board. Score Interpretation Guide. College Level Examination Program. 1967.

ABSTRACT

Between September 1967 and February 1968, three of the General Examinations of the College Level Examination Program were administered to 319 Missouri women, aged 25-73, for the purpose of comparing their test performance with that of regularly enrolled freshman and sophomore college women, and of developing normative data for adult women. Personal data provided several variables which were analyzed to determine which ones were significantly related to the women's test performance. An important conclusion is that age is not significantly related to satisfactory performance on any of the three tests. Recency of formal enrollment in school or college is significant at the 5% level only for the Natural Sciences test. Participation in a variety of informal educational experiences significantly affects performance on all the examinations. The Social Sciences-History test appears to offer women, in general, the best chance to demonstrate the academic value of non-traditional learning and life experience. These and other findings have important implications for counselors of adults, college admissions officers, and employers of mature women.

LIFE EXPERIENCE HAS ACADEMIC VALUE

Margaret C. Fagin
University of Missouri - St. Louis

ERIC Clearinghouse
FEB 1 1 1971
on Adult Education